CLAIMS

What is claimed is:

1. A method for performing congestion control in a connection-oriented packet-switching network, the method comprising:

receiving notification of traffic congestion in a first path connecting a source node and a destination node;

ascertaining whether an alternative path exists with better throughput for routing traffic than the first path; and

selecting the alternative path to route traffic between the source node and the destination node, if the alternative paths exists.

2. The method as recited in Claim 1, wherein the first path is a non-real time virtual circuit connection between the source node and the destination node.

3. The method as recited in Claim 1, wherein the alternative path is a non-real time virtual circuit connection between the source node and the destination node.

4. The method as recited in Claim 1, wherein the traffic congestion is experienced at one or more nodes forming a portion of the first path connecting the source node and the destination node.

5. The method as recited in Claim 1, wherein ascertaining whether the alternative path exists with better throughput for routing traffic than the first path, comprises determining whether an alternative path exists with an

available cell rate that is greater than a available cell rate for the first path, the available cell rate for the first path measured when the traffic congestion in the first path is eliminated through cell rate control.

6. A method for performing congestion control in a node in a connection-oriented packet-switching network, the method comprising:

receiving notification of traffic congestion at a node located in a first path connecting a source node and a destination node, wherein the first path is a non-real time connection with a Minimum Cell Rate (MCR) of R_{ACR} and a Peak Cell Rate (PCR) of R_{PCR};

ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1; and

selecting one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist.

7. The method as recited in Claim 6, wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths which best satisfies the R_{ACR} in accordance with one or more rules, if there are more than one of the M alternative paths.

8. The method as recited in Claim 6, wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths with a maximum amount unreserved resources to satisfy the R_{ACR}, if there is more than one of the M alternative paths.

9. The method as recited in Claim 6, wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths with a least amount unreserved resources but enough unreserved resources to support the R_{ACR}, if there is more than one of the M alternative paths.

10. The method as recited in Claim 6, wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting a first one of the M alternative paths found to satisfy the R_{ACR}, if there is more than one of the M alternative paths.

11. The method as recited in Claim 6, wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths that satisfies the R_{ACR} according to one or more custom criteria, if there is more than one of the M alternative paths.

12. The method as recited in Claim 6, wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths that satisfies the R_{ACR} according to one or more fuzzy rules, if there is more than one of the M alternative paths.

13. One or more computer-readable media having stored thereon computer executable instructions that, when executed by one or more processors, causes a computer to:

receive notification of traffic congestion in a first path connecting a source node and a destination node in a connection-oriented packet-switching network;

ascertain whether an alternative path exists with better throughput for routing traffic than the first path; and

select the alternative path to route traffic, if the alternative paths exists.

14. One or more computer-readable media as recited in Claim 13, wherein the computer is a switch.

15. One or more computer-readable media having stored thereon computer executable instructions that, when executed by one or more processors, causes a computer to:

receive notification of traffic congestion at a node located in a first path connecting a source node and a destination node, wherein the first path is a non-real time connection with a Minimum Cell Rate (R_{MCR}) and Peak Cell Rate (PCR) of $R_{PCR;}$

ascertain whether M alternative paths exist with available resources able to satisfy the R_{PCR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1; and

select one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist.

16. A method for performing congestion control in a node in a connection-oriented packet-switching network, the method comprising:

receiving notification of traffic congestion at a node located in a first path connecting a source node and a destination node, wherein the first path is a non-real time connection with a Minimum Cell Rate (R_{MCR}) and Peak Cell Rate (PCR) of $R_{PCR;}$

ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1;

selecting one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist;

ascertaining whether X alternative paths exist with available resources able to satisfy a reduced Available Cell Rate (ACR) of R'_{ACR}, if M alternative paths do not exist, wherein R'_{ACR} is less than the R_{ACR}, but is greater than a new ACR for the first path if rate control is instituted to eliminate the traffic congestion; and

selecting one of the X alternative paths to reroute the traffic between the source node and the destination node the if the X alternative paths exist.

17. A system, comprising:

means for receiving notification of traffic congestion at a node located in a first path connecting a source node and a destination node, wherein the first path is a non-real time connection with a Minimum Cell Rate (R_{MCR}) and Peak Cell Rate (PCR) of R_{PCR};

means for ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1; and

means for selecting one of the M alternative paths to reroute the traffic between the source node and the destination node the if the M alternative paths exist.

18. The system as recited in Claim 17, further comprising means for ascertaining whether X alternative paths exist with available resources able to

satisfy a reduced Available Cell Rate (ACR) of R'_{ACR}, if M alternative paths do not exist, wherein R'_{ACR} is less than the R_{ACR}, but is greater than a new ACR for the first path if rate control is instituted to eliminate the traffic congestion; and

means for selecting one of the X alternative paths to reroute the traffic between the source node and the destination node the if the X alternative paths exist.